

# **Mobile Web-based Rural Information System for Tropical Fruits Diseases**

A Thesis submitted to the College of Arts and Sciences in full  
Fulfillment of the requirements for the degree of  
Master of Science

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By  
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## **ABSTRACT**

The agricultural sector is an essential resource and important to any country, particularly, when it is the main source of income. Modern methods, treatments, the application of modern technology in agriculture and other information on how to care for and protect tropical fruits from diseases are useful to develop and generate wealth of rural areas, where most of the population works in agriculture. Majority of the population of countries are in the rural, and these people often do not have access and connectivity to computers and the Internet. However, more than 80% of the people in Malaysia have hand phones. Thus this study will focus on the development of mobile web-based rural information system to help the farmers identify and seek solution to the problems like diseases faced in their agriculture produce.

## **ACKNOWLEDGEMENT**

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## **List of Abbreviations**

UUM	Universiti Utara Malaysia
ICT	Information and Communication Technology
PDA	personal digital assistant
GSM	Global System for Mobile communication
WAP	Wireless Application Protocol
GPS	Global Positioning System
SIM	Subscriber Identity Module
SMS	Short Message Service
MO	Mobile Originated Short Message Service Transfer
MT	Mobile Terminated Short Message Transfer
IMSI	International Mobile Subscriber Identity
TCP/IP	Transport Control Protocol/Internet Protocol
OSI	Open Systems Interconnect model
OMA	Open Mobile Alliance
IrDA	Infrared Data Association
CDMA	Code Division Multiple Access
GPRS	General Packet Radio Service
UMTS	Universal Mobile Telephone System
WAE	Wireless Application Environment
WSP	Wireless Session Protocol
WTP	Wireless Transaction Protocol

WTLS	Wireless Transport Layer Security
WDP	Wireless Datagram Protocol
WML	Wireless Markup Language
HTTP	Hyper Text Transfer Protocol
UDP	User Datagram Protocol
OSI	International Standard Organization
HTML	Hypertext Mark-up Language
URL	Uniform Resource Locator
XML	Extensible Markup Language
RUP	Rational Unified Process
RIS	Rural information system
UML	Unified Modeling Language
IIS	Internet Information service
ASP	Active Server Page
SSL	Secure Sockets Layer

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Background**

More than the past twenty years, the World Bank has financed above \$ 400 million outlay in agricultural education and preparation in developing countries. This money has assisted many countries to build local capacity for preparation technical staff and managers in the sector of rural development (World Bank, 2009). These skills are necessary for human resource development and provision of services necessary to villagers to increase agricultural productivity and sustainability of their farming systems. Without this ability of the rural population to increase productivity, the quality of their lives and livelihoods will be compromised.

Agriculture is a science and art to produce plant useful to the human, through experience and research conducted on the many different methods of cultivation and fertilization, and pest control. Agriculture has become a science whereby a series of operations based on scientific observations are repeatedly tested. This helped farms to produce tropical fruits with quality and in sufficient quantities and at an ongoing effort and reasonable costs. Industry and agriculture products sold in the markets and prices are affected by several factors, requiring farms to be aware of ways to protect it from climatic conditions and diseases targeted by the crop.



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